REMARKS

Claims 1-59 are currently pending in this case. Claims 1, 9, 18 26, 35, 43, and 52 are independent. Claims 1-10, 13-27, 30-44 and 47-59 remain rejected under 35 U.S.C. 103(a) as being unpatentable over G.M. Bierman "Using XML as an Object Interchange Format". In the current amendment, claims 1, 9, 10, 11, 12, 18, 26, 27, 28, 29, 35, 43, 44, 45, 46 and 52 have been amended. Applicants note with appreciation the Examiner's indication of allowable subject matter in claims 11, 12, 28, 29, 45 and 46, which were originally objected to for depending from a rejected base claim. In view of this rejection, claims 11, 12, 28, 29, 45 and 46 have been re-written in independent form. . Upon entry of the current amendment, claims 1-59 will be presently pending in this application, of which claims 1, 9, 18, 26, 35, 43, and 52 are independent. Applicants submit that pending claims 1-59 are in condition for allowance.

The following comments address all stated grounds of rejection. The Applicants urge the Examiner to pass the claims to allowance in view of the remarks set forth below.

Claim Amendments

Claims 1, 9, 10, 18, 26, 27, 35, 43, 44 and 52 have been amended to clarify and more fully appreciate the Applicants' claimed invention. In regards to pending independent claims 1, 9, 18, 26, 35 and 43, an additional limiting "sharing" element has been introduced to the now amended independent claims. Support for the amended claims can be found throughout the pending specification as well as the presently pending dependent claims. For example, on page 7, line 20 to page 8, line 8 the translation of at least one structured document is recited. Said amendments to the claims introduce no new matter. Applicants further submit that the presently pending claims are in condition for allowance. Claims 11, 12, 28, 29, 45 and 46, which were

deemed allowable but for their reliance on rejected independent claims, have been re-written in

independent form. Applicants respectfully submit that these claims amendments introduce no

new matter and are fully supported by the specification.

Claim Rejections Under 35 U.S.C. §103

I.　Claims Rejected Under 35 U.S.C §103 As Being Unpatentable Over Bierman

Summary of Claimed Invention

The present invention is directed towards managing objects in a database that stores

structured documents representing objects. Applications implementing objects in different

programming languages may store objects to or retrieve objects from the database. The

instances of the objects may be implemented in a variety of programming languages, such as,

but not limited to, Java, C, C++, and Fortran. These instances of objects are translated into a

structured document compatible with the database. The structured document, such as an XML

document, provides a representation of the instance of the object.

In maintaining objects in the structured document database, the claimed invention

requests to store an instance of an object to the database, and translates said instance of the

object into a structured document. The structured document represents the instance of the object

and the attributes and attributes values for the class of the object. The content of the structured

document representing the object is stored in the database. In accessing objects in the database,

the claimed invention requests to access an instance of an object from the database storing

structured documents representing objects. The instance of the object is obtained from the

database and a structured document is generated to represent the object including attributes and

attribute values of the class of the object. The structured document is returned in response to the request. After receiving the structured document, an object implemented in any programming language is generated to embody the object represented by the structured document, including attributes and attribute values of the class of the object.

The claimed invention provides for maintaining objects implemented in different programming languages from different applications in an object database that stores structured documents representing the objects. This allows an object database to support multiple applications and multiple programming languages by storing objects in a structured document that represent the objects of the different programming languages. In this manner, applications using different programming language can share objects stored in the database.

Summary of Bierman

Bierman is an article that describes using XML as an Object Interchange Format (OIF) in conjunction with the standards of the Object Data Management Group (ODMG). Bierman is focused on proposing an alternative language and new XML document type of an Object Interchange Format Markup Language, OIFML, based upon XML. According to the ODMG standards, OIF is a specification language used to dump and load the current state of an ODMG-compliant object data management system (ODMS). For example, OIF can provide a file format for loading and unloading data from an ODMS. Bierman describes the details of the specification language of OIFML with respect to the structure and definition of objects and object attributes in an OIFML file.

Amended Independent Claims 1, 18, 35 Patentably Distinguished Over Bierman

Applicants respectfully submit that Amended claims 1,18 and 35 now patentable

distinguish themselves over the cited art to Bierman. As Amended independent claims 1, 18,

and 35 are directed to a method, system and program respectively Applicants submit the

following arguments in support of the allowably of claims 1,18 and 35. These amended

independent claims now recite the *maintaining of a database of objects accessible by a plurality*

of applications including the steps of providing at least one structured document which

represents the instance of the object including attributes and attribute values defined for a class

and then adding this structured document into a database. This database may further store

multiple structured documents representing multiple objects, all of which *are shared with a*

second application.

Applicants respectfully submit that the cited art to Bierman fails teach or suggest each

element of the present invention. Applicants submit that Bierman simply describes the encoding

of an ODMG-objects into an XML based markup language. Such a summation is clearly

detailed at page 12 of Bierman. This markup language focuses on the dumping and loading of

the current state of an ODMG-compliant ODMS.

In contrast with the claimed invention, Bierman is <u>not</u> concerned with a request to store

an instance of an object implemented in a first programming language into a database.

Furthermore Bierman fails to teach or suggest the providing of a stored instance of an object into

a structured document representing the instance of the object, wherein the structured document

includes attributes and attribute values defined for a class. Additionally, Bierman fails to teach

or suggest the adding of the content of the structured document into a database such that this

information is eventually *shared with a second application.* Instead, Bierman discusses the

details of the specification of the OIFML format, including the basis structure, object definitions

and physical clustering. Applicants submit that the concept of OIFML physical clustering

applies to the locating of an object in close proximity to another object as controlled by an XML

attribute proximity definition. Physical clustering such as this is illustrated at page 3 of

Bierman.

In view of the above, Applicants submit that Bierman does not teach or suggest the

maintaining of a database of objects accessible by a plurality of applications wherein the storage

of an instance of an object implemented in a first programming language is requested.

Furthermore Applicants submit that the providing of an instance of an object into a structured

document, wherein the content of the structured document is added o a database, is not taught or

suggested by Bierman. Applicants additionally state that the *sharing* of the structured document

within a databases by a second application is neither taught nor suggested by Bierman.

For at least the aforementioned reasons, Applicants respectfully submit that the Bierman

reference fails to render the present application obvious. Therefore, Applicants submit that

amended claims 1, 18 and 35 are patentable and in condition for allowance. Claims 2-8 depend

on and incorporate the patentable subject matter of independent claim 1, as amended. Claims

19-25 depend on and incorporate the patentable subject matter of independent claim 18, as

amended. Claim 36-42 depend on and incorporate the patentable subject matter of independent

claim 35, as amended. As such, claims 2-8, 19-25, and 36-42 are patentable and in condition for

allowance. Accordingly, Applicants request the Examiner to withdraw the rejection of claims 1-

8, 18-25, and 35-42 under 35 U.S.C. §103.

Amended Independent Claims 9, 26, and 43 Patentably Distinguished over Bierman

Amended independent claims 9, 26, and 43 are directed towards a method, system and

program, respectively. In view of this, Applicants submit the following arguments to overcome

the Examiner's objections to the method, system and program claims currently rejected. These

independent claims recite accessing a database of objects by a plurality of applications herein a

first application of said plurality requests to obtain in a programming language an instance of a

least one object from a database that stores multiple structured documents. Additionally, an

instance of at least one object is translated into a structured document, wherein the structured

document includes a representation of the attribute and attribute values in the object.

Furthermore, the structured document is provided, such that the structures document is shared

among a plurality of applications.

Applicants respectfully that Bierman does not teach or suggest each element of these

pending claims as Bierman merely describes an XML markup language for a proposed OIF

format that focuses on dumping and loading the current state of an ODMG-compliant ODMS

into a file. Furthermore, Bierman fails to teach or suggest the accessibility of a database that is

shared by a plurality of applications, but rather recites the encoding of ODMG objects in a

modified XML language. Therefore, Applicants respectfully submit that each element of the

presently amended claims are neither taught nor recited by the cited art. In view of this,

Applicants request that the Examiner pass claims 9,26 and 43 to allowance. Claims 10-17

depend on and incorporate the patentable subject matter of independent claim 9, as amended.

Claims 27-34 depend on and incorporate the patentable subject matter of independent claim 26,

as amended. Claims 44-51 depend on and incorporate the patentable subject matter of

independent claim 43, as amended. As such, claims 10-17, 27-34, and 44-51 are patentable and

in condition for allowance. Accordingly, Applicants request the Examiner to withdraw the

rejection of claims 9-17, 26-34, and 44-51 under 35 U.S.C. §103.

Amended Independent Claim 52 Patentably Distinguished over Fong

Amended independent claim 52 is directed towards a computer readable medium claim

including a computer database of objects accessibly by a plurality of applications. The computer

database of objects stores multiple structured documents representing multiple objects and

comprises at least one structured document representing an instance of an object including

attributes and attribute values defined for a class. These structured documents may be accessed

by a plurality of applications associated with the database. The instance of the object is

implemented in a programming language.

Applicants respectfully submit that the Bierman reference does not disclose, teach or

suggest a database capable of sharing information among a plurality of applications capable of

receiving a request to store the instance of an object implemented in a programming language to

the database, and to storing content of the structured document representing the instance of the

object into the database. As discussed above, Bierman solely recites an XML markup language

for dumping and loading the current state of an ODMG-compliant ODMS. Thus, Applicants

submit that the Bierman reference focuses on the formalities of the OIFML language, thereby

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failing to teach or suggest the a database accessibly by a plurality of applications, wherein the database may receive a request to store the instance of the object implemented in a programming language to the database, and to store content of the structured document representing the instance of the object into the database. As Bierman fails to teach or suggest each element of the present application, Applicants respectfully submit that amended claim 52 is patentable and in condition for allowance. Claims 53-59 depend on and incorporate the patentable subject matter of independent claim 52, as amended. As such, claims 53-59 are patentable and in condition for allowance. Accordingly, Applicants request the Examiner to withdraw the rejection of claims 52-59 under 35 U.S.C. §103.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this statement. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. SMQ-114 from which the undersigned is authorized to draw.

Dated: July 19, 2005   Respectfully submitted,

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